

CLAIM AMENDMENTS

1. (Currently Amended) An artificial disc for placement between adjacent vertebrae comprising:

at least one upper substantially flat plate member and one lower substantially flat plate member, each plate member having corresponding outer and inner bearing surfaces;

at least one flexible supporting means interposed between said upper and lower plate members and abutting said corresponding inner bearing surfaces, said flexible support means flexibly and compressibly supporting said upper and lower plate members to allow compression of the adjacent vertebrae; and

~~at least one~~ means for temporarily stabilizing said flexible supporting means for a certain period of time to allow at least two of said outer bearing surfaces to osteo-integrate with the adjacent vertebrae, wherein said ~~at least one~~ temporarily stabilizing means is spaced from ~~said upper or lower substantially flat plate members to allow limited axial rotation tilting of said upper and lower substantially flat plate members with respect to each other.~~

2. (Previously Presented) The artificial disc as set forth in Claim 1 comprising a pair of upper and lower plate members, wherein said corresponding inner bearing surface of each of said pair of plate members faces each other.

3. (Previously Presented) The artificial disc as set forth in Claim 1 wherein said at least one flexible supporting means is made of a bio-compatible and compressible material.

4. (Original) The artificial disc as set forth in Claim 1 wherein said at least one flexible supporting means is made of titanium alloy.

5. (Original) The artificial disc as set forth in Claim 1 wherein said at least one flexible supporting means comprises a flexible disc.

6. (Previously Presented) The artificial disc as set forth in Claim 5 wherein said at least one flexible disc having opposed convex outer surfaces and each corresponding inner surface of each plate member correspondingly mates with each of said convex outer surface.

7. (Previously Presented) The artificial disc as set forth in Claim 6 wherein each of said corresponding inner surfaces is concavely shaped.

8. (Withdrawn) The artificial disc as set forth in Claim 1 wherein said at least one flexible supporting means comprises a bellows.

9. (Withdrawn) The artificial disc as set forth in Claim 1 further comprising an elastomeric polymer between said plate members.

10. (Withdrawn) The artificial disc as set forth in Claim 1 further comprising an elastomeric polymer within said flexible support means.

11. (Currently Amended) The artificial disc as set forth in Claim 1 wherein said ~~at least one~~ temporarily stabilizing means is made of a substantially rigid bio-compatible and bio-resorbable material.

12. (Currently Amended) The artificial disc as set forth in Claim 11 wherein said ~~at least one~~ temporarily stabilizing means comprises a rigid collar surrounding said flexible supporting means between said upper and lower plate members such that upon resorption of said collar, said flexible supporting means remains between said upper and lower plate members.

13. (Previously Presented) The artificial disc as set forth in Claim 11 further comprising an additional stabilizing assembly supporting said at least one upper or lower substantially flat plate members and adapted to attach to at least one of said vertebra such that upon resorption of said additional stabilizing assembly, said flexible supporting means remains between said upper and lower plate members.

14. (Previously Presented) The artificial disc as set forth in Claim 13 wherein said additional stabilizing assembly comprises photo-initiated polymer rod.

15. (Previously Presented) The artificial disc as set forth in Claim 13 wherein said additional stabilizing assembly comprises photo-initiated polymer plate.

16. (Withdrawn) The artificial disc as set forth in Claim 8 wherein said at least one temporarily stabilizing means comprises a substantially rigid bio-resorbable material surrounding and adjacent said bellows between said plate members such that upon resorption of said material, said bellows remains between said plate members.

17. (Original) The artificial disc as set forth in Claim 11 wherein said substantially rigid bio-compatible and bio-resorbable material is a polymer that is photocurable by ultra-violet light in the range of 350-385 nanometers in wavelength.

18. (Original) The artificial disc as set forth in Claim 11 wherein said substantially rigid bio-compatible and bio-resorbable material is a polymer that is photocurable by visible light in the range of 385-550 nanometers in wavelength.

19. (Original) The artificial disc as set forth in Claim 11 wherein said substantially rigid bio-compatible and bio-resorbable material is pliable and putty-like in an uncured state and not pliable in the cured state.

20. (Original) The artificial disc as set forth in Claim 11 wherein said substantially rigid bio-compatible and bio-resorbable material is colored in an uncured state and turns clear in the cured state.

21. (Withdrawn) The artificial disc as set forth in Claim 1 comprising two or more pair of plate members, at least one plate member from each set are interconnected and each pair of plate members are independently and flexibly supported by each of said flexible supporting means.

22. (Withdrawn) The combination of an artificial disc and a substance comprising:
at least two plate members, each plate member having a corresponding surface;
at least one means for temporarily stabilizing said plate members for a certain period of time to allow at least two of said plate members to osteo-integrate with said adjacent vertebrae;
at least one flexible supporting means interposed between said plate members and abutting said corresponding surfaces, said flexible support means flexibly supporting said plate members after said certain period of time; and
a substance that promotes osseous integration and bone in-growth adjacent to said plate members.

23. (Withdrawn) The combination of an artificial disc and a substance comprising:
at least two plate members, each plate member having a corresponding surface;
at least one means for temporarily stabilizing said plate members for a certain period of time to allow at least two of said plate members to osteo-integrate with said adjacent vertebrae;
at least one flexible supporting means interposed between said plate members and abutting said corresponding surfaces, said flexible support means flexibly supporting said plate members after said certain period of time; and
a substance with hemostatic drug eluting factors to control bleeding adjacent to said plate members.

24. (Currently Amended) The combination of an artificial disc and a substance comprising:
at least one upper substantially flat plate member and one lower substantially flat plate members, each plate member having corresponding outer and inner bearing surfaces;
at least one flexible supporting means interposed between said upper and lower plate members and abutting said corresponding inner bearing surfaces, said flexible support means flexibly and compressibly supporting said upper and lower plate members to allow compression of the adjacent vertebrae;
~~at least one~~ means for temporarily stabilizing said flexible supporting means for a certain period of time to allow at least two of said outer bearing surfaces to osteo-integrate with the adjacent vertebrae, wherein said ~~at least one~~ temporarily stabilizing means is spaced from said upper or lower substantially flat plate members to allow limited axial rotation tilting of said upper and lower substantially flat plate members with respect to each other; and
a substance with time released anti-microbial factors to control and prevent infection adjacent to said plate members.

25. (Withdrawn) The combination of an artificial disc and a substance comprising:
at least two plate members, each plate member having a corresponding surface;
at least one means for temporarily stabilizing said plate members for a certain period of time to allow at least two of said plate members to osteo-integrate with said adjacent vertebrae;
at least one flexible supporting means interposed between said plate members and abutting said corresponding surfaces, said flexible support means flexibly supporting said plate members after said certain period of time; and
a substance with anti-tumor drugs to control or eradicate tumors adjacent to said plate members.

26. (Withdrawn) The combination of an artificial disc and a substance comprising:
at least two plate members, each plate member having a corresponding surface;
at least one means for temporarily stabilizing said plate members for a certain period of time to allow at least two of said plate members to osteo-integrate with said adjacent vertebrae;
at least one flexible supporting means interposed between said plate members and abutting said corresponding surfaces, said flexible support means flexibly supporting said plate members after said certain period of time; and
a substance with pain-controlling factors to control pain adjacent to said plate members.

27. (Withdrawn) A method of employing an artificial disc for achieving stability of adjacent vertebrae and preserving the inter-disc space comprising the steps of:
surgically exposing an area for placement of said artificial disc between adjacent vertebrae;
inserting said artificial disc having at least two plate members, with each plate member having a surface, in said space between adjacent vertebral end plates with at least two corresponding plate member abutting a corresponding vertebrae;
providing at least one means for temporarily stabilizing said plate members in said space for a certain period of time to allow at least two of said plate members to osteo-integrate with said adjacent vertebrae; and
providing at least one flexible supporting means interposed between and abutting said plate members, said flexible supporting means flexibly supporting said plate members after said certain period of time.

28. (Withdrawn) The method as in Claim 27 wherein said at least one temporarily stabilizing means comprises a bio-compatible, bio-resorbable material.

29. (Withdrawn) The method as in Claim 28 wherein said bio-compatible, bio-resorbable material is a polymer that is photocurable by ultra-violet light in the range of 350-385 nanometers in wavelength.

30. (Withdrawn) The method as in Claim 28 wherein said bio-compatible, bio-resorbable material is a polymer that is photocurable by visible light in the range of 385-550 nanometers in wavelength.

31. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material is pliable and putty-like in an uncured state and not pliable in the cured state.

32. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material is colored in an uncured state and turns clear in the cured state.

33. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material contains a substance that promotes osseous integration and bone in-growth.

34. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material contains a substance with hemostatic drug eluting factors to control bleeding.

35. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material contains a substance with anti-microbial drug eluting factors to control and prevent infection.

36. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material contains a substance with anti-tumor drugs to control or eradicate tumors.

37. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material contains a substance with pain-controlling factors to control pain.

38. (Previously Presented) The artificial disc as set forth in Claim 13 wherein said additional stabilizing assembly comprises bio-resorbable polymer in the form of rods and screws.

39. (Previously Presented) The artificial disc as set forth in Claim 13 wherein said additional stabilizing assembly comprises bio-resorbable polymer in the form of plate and screws.

40. (Withdrawn) The artificial disc as set forth in Claim 1 comprising two or more pair of first and second plate members forming two or more modular sets of first and second plate members, and further comprising means for connecting said each set of plate members, wherein each set of plate members are independently and flexibly supported by each of said flexible supporting means.

41. (Withdrawn) The artificial disc as set forth in Claim 40 wherein said connecting means selectively connects and reconnects said each modular set of plate members.

42. (Withdrawn) The method as in Claim 28 wherein said bio-resorbable material is colored in an uncured state and changes to a different color in the cured state.

43. (Previously Presented) The artificial disc as set forth in Claim 1 wherein said flexible support means flexibly and compressibly supporting said plate members to allow axial compression of the adjacent vertebrae at varying moments.

44. (Previously Presented) The artificial disc as set forth in Claim 1 wherein said at least one flexible supporting means comprises a bio-compatible and compressible material.

45. (Previously Presented) The artificial disc as set forth in Claim 1 wherein said at least one flexible supporting means comprises a titanium alloy.

46. (Previously Presented) The artificial disc as set forth in Claim 13 wherein said additional stabilizing assembly comprises photo-initiated polymer screws.